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Loan Repayment Problems of Farmers in the Mid-1980's

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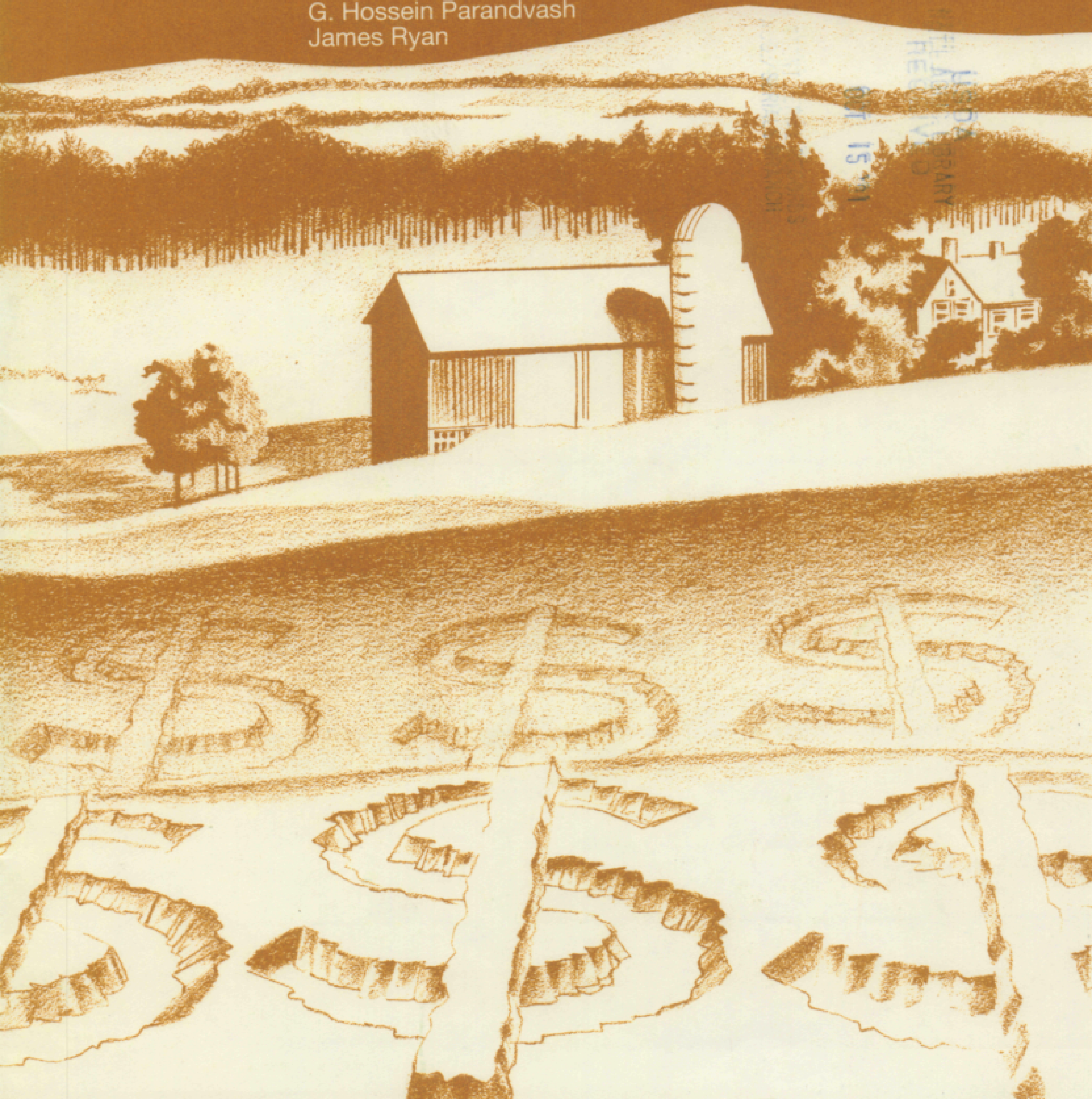

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Abstract

The inability of many farmers to repay debt obligations--due to falling commodity prices, stagnant farm income, and declining land values (the collateral securing much of the debt)--is probably the clearest example of the extent of the farm financial crisis of the early and mid-1980's. The problems of that period have since eased. Total outstanding farm debt fell $58 billion, from $206.5 billion at the beginning of 1984 to $148.5 billion by the end of 1988. Farmers used earnings retained from previous periods and increased cash incomes during 1984-87 to reduce their existing debts by more than $38 billion. Some of the adjustment occurred among agricultural lenders, who wrote off $20 billion in defaulted farm debts, about 10 percent of outstanding farm loans. The worst problems were thus resolved for most farmers but not all: agricultural lenders still face more than $2 billion in potential losses of principal and interest payments (loan losses). This report reviews the bottom line of the 1980's farm financial crisis: farmers' loan defaults and subsequent loan losses. These problems are also examined by location, farm size, farm type, and socioeconomic characteristics.

Keywords: Potential loan loss, default, farm financial crisis, assets, debt, agricultural finances, lenders, chargeoffs, recoveries

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Summary

The farm sector experienced the most severe financial crisis in the early and mid-1980's since the Depression. The inability of many farmers to repay debt obligations--due to falling commodity prices, farm income, and land values (the collateral securing much of the debt)--is probably the clearest example of the extent of the financial crisis. These problems have since eased. Total outstanding farm debt fell $58 billion, from $206.5 billion at the beginning of 1984 to $148.5 billion by the end of 1988. Farmers used earnings retained from previous periods and increased cash incomes during 1984-87 to reduce their existing debts by more than $38 billion. Some of the adjustment occurred among agricultural lenders who wrote off $20 billion in defaulted farm debts, about 10 percent of outstanding farm loans. These lender writeoffs represent over 33 percent of the decline in outstanding farm debts during 1984-88.

This report reviews the bottom line of the 1980's farm financial crisis: farmers' loan defaults and lenders' subsequent losses of principal and interest payments (loan losses). These problems are also examined by location, farm size, farm type, and socioeconomic characteristics.

The Federal Government helped stabilize the farm sector's finances with direct payments to farmers. By cushioning the financial problems, the payments helped keep borrowers on the farm and helped limit large-scale losses to lenders. Direct Government payments to farmers reached new highs during 1986-87, the turning point of the crisis.

Recent trends clearly point to the resolution of most of the farm financial problems of the 1980's. Total annual loan losses decreased from $4.7 billion in 1985 to $3.8 billion in 1988. But, lenders still face more than $2 billion in potential losses.

Farm lenders have recently received some relief from such exposure to risk through modifications in accounting practices that allow loan losses to be recognized (amortized) over a longer period of time. Anticipated losses previously had been expensed in the reporting period. However, a major influence on reported loan losses will be the rate at which the Farmers Home Administration (FmHA), one of the largest lenders to farmers, resolves its portfolio of problem loans. FmHA could write off as much as $8 billion in delinquent, uncollectible farm loans between 1989 and the early 1990's. Increases in FmHA loan losses will reflect past financial conditions (legal decisions hindered FmHA from reporting the losses earlier). Losses will also increase as restructured debt or deferred payment options are applied to the amounts currently delinquent.

Some highlights of outstanding debt and loan losses:

- Combined loan losses for all lenders totaled about $19.3 billion from 1984 through 1988. Both the Farm Credit System (FCS) and commercial banks showed reduced loan losses in 1987 and 1988. FCS losses decreased from $1.3 billion in 1986 to $368 million in 1988. Commercial bank losses declined from $1.3 billion in 1986 to $275 million in 1988.

- However, FmHA losses rose from $490 million in 1986 to $1.2 billion in 1987, and to $2.5 billion in 1988. These losses can be expected to grow in the near future. In early 1989, FmHA's portfolio of major farm program loans included over $8.3 billion in delinquencies, about $6.6 billion of which has been delinquent for more than 4 years.

Some highlights of financial stress among commercial and small farms:

- About 90 percent of default losses occurred on loans to commercial farmers (annual sales of $40,000 or more). The number of ongoing commercial farms facing default declined from more than 122,000 in 1985 to about 60,000 in 1988. Their potential loan loss fell from $8.6 billion in 1985 to $3.2 billion in 1988. About 10-20 percent of loan losses were held by small farms (sales under $40,000). Their potential loan loss fell from $760 million in 1986 to $550 million at the end of 1988.

- At the end of 1988, severe financial stress was limited to about 18,000 insolvent commercial farms (debts exceeded assets). This group accounted for about 85 percent of all default losses among commercial farms. About 1 percent of small farmers were insolvent. But most were able to endure the downturn, since they had $3,000 more in off-farm income than commercial farms, and a greater ability to control total expenses by trimming family living expenditures.

- Commercial farmers in default tended to be efficient producers in terms of the farm commodities generated by their asset base. Their ratio of sales to assets, 0.39, was nearly double the 0.21 average of financially stable operators in 1988.

- Default losses among corn/soybean farms remained the highest of any commercial enterprise. But their potential losses fell from $3 billion in 1985 (35 percent of potential losses) to $0.5 billion in 1988 (17 percent of total losses). Only about 8-9 percent of fruit, vegetable, cotton, and rice operators faced default problems in 1988, the lowest proportion among major commercial enterprises.

- The most severe regional loan problems for commercial farmers occurred in the Midwest (Corn Belt, Lake States, Southern Plains, and Northern Plains), home of nearly 75 percent of financially distressed commercial farms. Small farmers with default problems were more evenly distributed among regions.

- Direct Government payments provided critical additions to cash-flow for nearly 75 percent of all commercial farmers facing loan default. The average payment was more than $16,000 in 1987-88. The 10 percent of farmers who had default problems received about 12 percent of the payments.

- About 60 percent of operators in loan default were under 45 years of age in 1988, while 62 percent of financially stable operators were 45 or over. Farmers facing default tended to be younger, have larger families, and earn 45 percent less in off-farm income than did financially stable operators.

- Commercial farms with default problems were three times more likely to be full-time farmers than were small farmers with default problems.

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Introduction

Farm financial problems became issues of great economic concern in the 1980's. The array of problems of the mid-1980's farm financial crisis was extraordinary: a severe cost-price squeeze; massive devaluation of assets, especially of land (the collateral securing most of the debt); large liquidations of farm debts. Because of these problems and falling commodity prices and farm income, many farmers could not repay debt obligations. As a consequence, there were widespread farm financial failures and restructurings. No segment of the farm sector was exempt from loan repayment problems. Losses of anticipated interest and principal repayments (loan losses) from defaulting farmers brought farm lenders into the crisis as well.

Agricultural bank failures during the mid-1980's and the highly publicized financial problems of the Farm Credit System (FCS) illustrate the link between the financial difficulties of farmers and their lenders. Assessing the extent and strength of this link requires information about the amount of debt potentially at risk of loss. Adequately secured debt may be associated with losses for farmers, but the lender's position is not usually hurt. But as the security backing the debt erodes (such as when the value of the land used as collateral for a loan decreases), and the lenders' exposure to risk increases, the effects of farm failures are increasingly felt in the rural financial community.

This report reviews the bottom line of the financial crisis: farmers' loan defaults and lenders' subsequent loan losses. Trends in actual losses are compared with forecasted losses for insight into economic factors occurring after 1986, such as rising farm incomes and appreciating land values, that changed the course of the crisis. Estimates of lenders' loan writeoffs are also provided to show the severity of the crisis one step beyond the farmgate.

Loan Defaults Measure Farm Financial Stress

Financial difficulties characterize the downside of the agricultural business cycle, as prolonged periods of low farm income produce worsening financial conditions in the farm sector. Nonpayment of loan obligations is perhaps the foremost indicator of financial downturns. In a review of the farm crisis of the mid-1980's, Leistritz and Ekstrom identify farm financial stress and offer an explanation as to its occurrence:

> Financial stress...may arise when market forces drive farm income or profits below their normal levels, but the critical factor in determining whether an individual, firm, or economic sector will experience such stress is its capacity to adjust to adverse economic events. When the adjustments required exceed the capacity to adjust, financial stress occurs (*5*, p. 76).[1]

Loan default, the stress criterion used in this study, indicates an inability "to adjust to adverse economic events," such as downturns in farm business conditions.

Agriculture experienced unusually large swings in the business cycle during the last 15 years. Real (adjusted for inflation) net farm income averaged $42 billion (1982 dollars) during 1972-79. This

[1]Italicized numbers in parentheses refer to sources cited in the references section.

amount was higher than in all but 1 year during 1955-71. In response to the economic prosperity and abetted by inflation, machinery investment (in current dollars) increased 192 percent, land values rose 235 percent, and the debt load in agriculture increased by 181 percent in this 8-year period *(6)*.

Because of these and other cost increases, farmers began the 1980's with a cost structure nearly three times higher than in 1970. Nominal (not adjusted for inflation) interest expenses grew from $3 billion in 1970 to $21 billion in 1982. Real net farm income declined nearly 45 percent, averaging $24 billion (1982 dollars) during 1980-85. By the mid-1980's, more than 100,000 commercial-size farms (sales exceeding $40,000) were unable to meet scheduled debt obligations from farm and off-farm earnings. These farmers found the continued operation of their farm businesses to be in jeopardy, and lenders faced the prospect of substantial losses in their farm loan portfolios.

This report identifies financial conditions that may put farmers in jeopardy of loan default and estimates potential loan losses of farm operators. Estimated loan losses are "potential" in the sense that loan losses could occur shortly after the financial condition of the farmer is evaluated. This vulnerability does not suggest that a loan loss will occur in all cases, since business conditions can change rapidly. For example, a 2- or 3-year period of increasing income levels that result in continuing appreciation of land values would substantially enhance the quality of lenders' loan portfolios. Provided that the increased income could sufficiently service debts, lower loan losses should result if the value of the real estate used as collateral increases. In fact, reduced loan losses since 1987, particularly in the Midwest, have coincided with rising land values.

The concept of potential loan losses as developed by the U.S. Department of Agriculture (USDA) identifies the scope of loan delinquency problems in agriculture and indicates the changing dimensions of loan problems over time.

Identifying Loan Defaults

Extensive national data describing loan terms and quality of individual farm loans are not available. Data on debt by lender, the current value of farm assets, interest, capital purchases, net farm earnings, and off-farm income are collected from individual producers and appear in annual USDA Farm Costs and Returns Surveys (FCRS). These data are used to analyze financial stress based on the potential for loan default.

We considered farmers to be vulnerable to loan default and, therefore, a potential loan loss if their joint debt position and debt service experience met one of the following conditions: (1) they were technically insolvent (debts exceeded assets) and obviously in danger of financial failure, (2) they had very high debts and could not make all principal and interest payments, or (3) they had high debts and could not make any payments on farm business loans. Criteria used in determining loan defaults include:

Debt position. The ratio of total farm debts to total assets. Debt position is characterized by several debt/asset ratio categories: no debt (0), low debt (0-0.4--or, debts equal less than 40 percent of assets), high debt (0.4-0.7), very high debt (0.7-1), and technically insolvent (1 + --or, more than 100 percent).

Debt service. The ability of farmers to meet their cash-flow requirements. These include interest, estimated principal payments, minimum capital replacement costs, and family living expenses. Debt service equals cash income before interest expenses, divided by the sum of interest expenses plus estimated principal payments due on outstanding loans.

Loan Default Model Permits Tradeoff Between Cash-flows and Debt Burdens

We used a loan default model to identify "problem" loans and to estimate related potential loan losses. The loan default model combines financial measures based on concepts of stock (debt position) and flow (debt service). Defaults can occur when either debt position or debt service becomes unfavorable. But, most defaults are likely to occur when both measures are in unfavorable ranges.

Our analysis of whether farmers are likely to default on farm loans allows for a tradeoff between a stronger cash-flow (which translates into improved debt service) and a weakening debt position (where debts increasingly dominate the farm's assets). For example, a highly indebted farmer with strong earnings may not be vulnerable to loan defaults in the short run. However, many lenders routinely reject loan applications that would expand the debt of highly leveraged producers. At the same time, a

less indebted farmer suffering a crop failure, thus facing potentially large cash losses, may be more vulnerable to loan default.

Debt service ability and debt position interact to form a financial stress triangle. About 90 percent of the potential for loan loss resides in the insolvent group of farmers. Thus, the loan default model is dominated by farmers whose debts are larger than their assets.

The focus on debt position relative to assets is consistent with the view that agricultural lenders have traditionally been asset-based lenders. That is, the adequacy of loan collateral has received more emphasis than the adequacy of projected cash-flows. When agricultural lenders evaluate loan applications, they recognize that prices and yields are highly uncertain due to variable weather. A large cushion of assets relative to debt can protect lenders from declines in farm prices or yields. Thus, debt position relative to assets continues to be a key indicator of farm financial health. Potential loan loss is an operationally oriented construct that equates financial stress with the likelihood of loan defaults.

USDA uses a combination of two factors as the primary measure of financial stress. A farmer with a debt/asset ratio greater than 0.4 and a negative net cash-flow is classified as financially vulnerable. These joint criteria produce a four-quadrant model, in which farms are classified as: favorable, marginal income, marginally solvent, and financially vulnerable *(10)*. Melichar developed an alternative stress measure based on equity level, debt/asset ratio, rate of return to equity, and rate of return to assets *(7)*. These two stress measures are sensitive to low incomes (income stress), meaning that low-income farmers will appear more vulnerable. On the other hand, the loan default model is more sensitive to insolvent debt positions, meaning that technically insolvent farmers with debts exceeding assets appear more vulnerable.[2]

[2]While the three stress concepts produce generally similar results regarding the share of farms that are financially stressed, there are a few striking differences. Because a disproportionately large number of dairy farms made partial payments on debt service obligations in 1985, and very few were insolvent, the loan-default model identified only 14 percent as stressed. However, USDA's four-quadrant measure identified 22 percent of commercial dairy farms as stressed. Thus, financial stress for dairy producers was either lower or higher than the national average for commercial farms, depending on the measure of stress.

Technical Issues Behind Estimating Loan Defaults and Potential Loan Losses

The loan default/potential loan loss approach to estimating the extent of financial stress is based on the following accounting relationship, which is derived from data reported by individual farm operators in the FCRS:

Debt/asset ratio (debts divided by assets). (1)

Where:

Debt = That owed to the Farmers Home Administration (FmHA), Federal land banks, production credit associations, Commodity Credit Corporation (CCC), banks, life insurance companies, merchants, and individuals. Also includes other reported farm debt.

Assets = Land and buildings; machinery, equipment, and tools; livestock inventories; crop inventories; and other reported business assets (including financial assets).

Debt service ratio = Net cash income plus interest paid, less the sum of machinery and equipment purchases and a family living allowance, divided by the sum of estimated scheduled principal repayment and interest paid. (2)

Where:

Net cash income = Money earned from crop and livestock marketings, CCC revenues, direct Government payments, farm-related income, and off-farm income, less the sum of cash operating expenses and interest paid.

Interest paid = Farm-related interest paid (to those listed in equation 1).

Machinery and equipment purchases = Machinery, accessory equipment, and livestock equipment purchased (placed on a depreciation schedule).

Family living allowance = A value based on median nonfarm income after adjusting for tax and the value of foods produced at home.

Estimated scheduled principal repayment = A repayment factor multiplied by the debt outstanding at yearend.[3]

The extent to which financial assets, such as certificates of deposit, are included in assets (equation 1) depends upon the comprehensiveness and consistency of farm reporting. For sole proprietorships, there may also be a fine distinction between personal and business financial assets.

The debt service relationship (equation 2) excludes a drawdown of savings or other financial assets. Cash available for debt service is generated from only farm and off-farm earnings during January to December of the year surveyed. The size of the nonfarm assets is not likely to be large for most financially stressed farmers. These farmers have an obvious incentive to liquidate available nonfarm assets and apply the proceeds to reduce burdensome farm debt. If sizable nonfarm assets exist and are liquidated, future cash-flows available for debt service will be reduced by the associated decrease in off-farm investment income.

Interest paid excludes past-due interest. It is presumed that financially stressed farmers frequently are unable to meet interest obligations as they come due. Therefore, the degree of financial stress in the survey sample may be understated. However, this bias is offset somewhat by the absence of information on the use of prior years' savings to service debt obligations.

Inclusion of non-real-estate capital purchases in the debt service equation reflects the view that some annual capital purchases are required for most ongoing farms. Such capital purchases of farmers facing loan default would be used to replace poorly functioning or inadequate machinery. Cash-flow budgets developed by farmers in conjunction with their lenders would be anticipated to include an allowance for capital replacement. If so, all cash-flow available to farm households, including off-farm income and an allowance for family living expenses, also would be components of loan application budgets (equation 2). The allowance for family expenses was $14,803 in 1984, $15,217 in 1985, $15,510 in 1986, $17,400 in 1987, and $19,200 in 1988.

[3]The repayment factor is a composite value based on a 7-year term for intermediate-term debt and a 30-year term for real estate debt. Intermediate loans are assumed to be in the 3rd year of the loan term, and real estate loans are assumed to be in the 10th year.

A key term of any loan agreement is when the loan is to be repaid. If the loan principal is not repaid as scheduled, then the loan can be declared to be in default. Thus, terms of principal repayment are important to the default model. Principal repayment data were estimated from reported loan balances and interest rates, lender information on loan terms, and projected amortization schedules. Note that principal repayment is also a component of USDA's four-quadrant model of financial stress *(10)*.

The proceeds from distress sales are frequently less than the asset value originally estimated in the foreclosure process. That is, assets generally will not bring full market value when sold under duress.[4] The foreclosure process may in itself be a high-cost transaction for the lender. Administration and litigation costs associated with foreclosure or bankruptcy, including interim management of farm assets until disposal, can be substantial. Unpaid and past-due interest accounts payable may not be included in the debt amounts listed by farmers in the FCRS.

Asset values are adjusted in the default model to account for the asset recovery costs mentioned above. The key computation in estimating potential loan losses is based on the difference between outstanding debt levels and the adjusted value of assets that can serve as security for that debt. Thus, the potential loan loss is the amount by which the level of outstanding debt exceeds the adjusted value of assets:

Potential loan loss (PLL) = Debt minus the adjusted value of assets; if PLL $\leq$ 0, then PLL = 0. (3)

Where:

Adjusted value of assets = Current market value of assets, minus real estate and machinery assets times a capital adjustment factor, minus commodity inventories and livestock assets times an inventory adjustment factor.

However, for farmers unable to meet any principal or interest payments, and with a debt/asset ratio between 0.4 and 0.7, the potential loan loss was assumed to be 5 percent of the outstanding debt. This exception to the general rule for determining a

[4]Markets, particularly real estate markets, tend to have relatively few active buyers during periods of prolonged financial difficulties. This is due in part to heightened concerns about risk when the rate of "forced sales" is substantially higher than usual.

potential loan loss was warranted by the extremely poor cash-flow of this class of farmers. Continued negative cash-flow of this magnitude tends to rapidly deteriorate the asset base. The value of the capital adjustment factor was set at 0.33, 0.25, 0.20, 0.20, and 0.20 for 1984, 1985, 1986, 1987, and 1988, respectively. The value of the inventory adjustment factor was set at 0.10 for 1984-88. Capital adjustment factors between 0.20 and 0.33 are consistent with survey information indicating that 30 percent of farm debt remained unpaid by financially stressed farmers exiting agriculture in the mid-1980's *(7)*.

The decline in the capital adjustment factor from 0.33 to 0.20 is a consequence of agricultural land values stabilizing in late 1986, after declining 10 percent in 1985 *(11)*. The 10-percent adjustment factor for crop and livestock inventories and other noncapital assets is warranted by the effect of distress sales (cited above) that tends to result in lower than anticipated sales prices for non-real-estate assets.

USDA Farm Operator Data

This study is based on data from the annual FCRS conducted by USDA's National Agricultural Statistics Service, with support and assistance from USDA's Economic Research Service. The FCRS was modified in 1984 to provide whole-farm financial data. While no national survey of producers provides complete financial data, the FCRS does provide comprehensive coverage of most financial activities. Although aggregate asset values and annual depreciation expenses are now included, data on the distribution of machinery types, purchase prices, and depreciation by component are not available. The FCRS continues to evolve over time. Loan interest rates, inventory changes for crop and livestock commodities, aggregate depreciation expenses, and contracting information became available in 1986.

The FCRS consists of both area- and list-sample frames. Samples are drawn so that each survey replicate is based on probability. Thus, each of the 12,000-14,000 completed farm surveys can be expanded within each State surveyed to statistically represent a given number of similar size farm operations.

The FCRS data in 1988 represented 90 percent of commercial farms and 77 percent of smaller farms (sales under $40,000). Prior to 1987, "point" farms with less than $1,000 in sales were not included in the FCRS. Exclusion of "point" farms resulted in a reduction in coverage of approximately 15 percent of small farms in the FCRS during 1984-86. However, farms with less than $1,000 in sales tend to be hobby farms, generating less than 1 percent of farm sector sales and responsible for a negligible share of agricultural loan defaults. The FCRS provided comprehensive coverage of agricultural business activity during 1984-88. But because of the substantial difference in the number of small and large farms represented in the FCRS, this report separately examines small and commercial-size farms.

The annual FCRS data do not account for approximately 40 percent of farm debt. Only farm operators are surveyed, so all landlord debt is excluded. The sample does not statistically represent about 5-10 percent of commercial farms and 20-40 percent of small farms (depending on the survey year). Also, some respondents may have misclassified some debt used for agricultural purposes into the nonfarm debt category (if secured by nonfarm assets). In addition, the FCRS excluded all debts that were not the liabilities of "ongoing" farmers. Thus, if a farmer had ceased operating in order to reorganize under the provisions of bankruptcy, or if a lender had repossessed a farm, these debt obligations would not be included in the FCRS data. [See *(10)* for additional information concerning treatment of noncoverage issues.] The closing section of this report, however, adjusts the data for the underrepresentation in the official estimates of total debt in the agricultural sector.

There is a notable difference in the classification of commercial farms between this report and other USDA financial studies. In this report, a farm is classified as commercial-size if sales, expenses, or the value of farm production equals or exceeds $40,000.[5] This modified sales criterion of farm size contrasts with those based strictly on sales. The broad definition was chosen for two reasons. First, the interyear distribution of the number of commercial farms is "smoothed." A large increase or decrease in inventories of commodities does not

[5]Value of production is the product of total yield times the average unit price during the time period between harvest and December of a specific year. For example, if a farm produced 10,000 bushels of corn in 1986, the value of production for corn would be 10,000 x $1.46 = $14,600. The average price for corn during September-December 1986 was $1.46 *(11)*. The value of production was not estimated for fruit, vegetable, and livestock enterprises because the FCRS did not contain the production/yield information.

substantially change farm size under this modified sales criterion, because there typically would be less change in the value of production or in the level of operating expenses. For example, widespread drought in a region, such as occurred in the South during 1986 and in the Midwest during 1988, would not affect operating expense levels as much as sales or production levels would be altered. Second, the size measure used in this report, which accounts for unusual inventory or expense changes, is also consistent with the lender (or agribusiness) orientation of this study. Farm lenders are likely to be as concerned with patterns of operating expenditures and inventories as with patterns of sales when evaluating a loan application.

Potential Loan Losses of Commercial Farms

Problem debt, generally classified as nonperforming by agricultural lenders, is identified by the two areas of financial stress shown in table 1: moderate and severe stress. The debt of insolvent farmers is inadequately secured by land, machinery, livestock, and other farm assets. A farmer with total debts exceeding total assets is considered to be severely stressed, a likely candidate for loan default even if full debt service was made in a particular year. Conservative financial accounting standards recognize that an insolvent farmer would increase personal net worth by declaring bankruptcy. (Of course, many farmers would not consider a zero net worth as a nonfarmer an improvement over a negative net worth as a farmer.) About 18,000 commercial farmers with $6 billion of debt were insolvent at the end of 1988. Their projected loan losses at the end of 1988 were about $2.7 billion.

Within the two areas of financial stress shown in table 1, approximately 44,000 commercial farmers with high and very high debts (debt/asset ratios between 0.4 and 1.0) were classified as having nonperforming loans because of negative cash-flows in 1988 (table 2). These moderately stressed farmers had debts of $11.6 billion (table 1), but only about $460 million was anticipated to be written off by lenders as loan losses. Although the triangle of problem debts illustrates possible tradeoffs between improving cash-flows and increasing debt, 90 and 85 percent of the potential loan losses in 1987 and 1988, respectively, are associated with insolvent farms. Such a large share of the problem debt held by insolvent operations is consistent with the traditional focus of agricultural lenders on collateral-based lending.

Approximately 62,000 commercial farmers faced potential default on farm business loans in 1988, because their debt levels were larger than the adjusted value of their assets or they had very high debts and could not make all principal and interest payments on their farm business loans. That number compares with 60,000 in 1987, 104,000 in 1986, 110,000 in 1985, and 123,000 in 1984 (table 3). This group of financially threatened farmers represented 10.2 percent of all commercial operators in 1988 but held 25 percent of the debt. Default conditions seem to have stabilized in 1988, as potential loan losses declined $840 million. But, about 1,700 more commercial farmers experienced default problems. The severe drought of 1988 did not result in a large upsurge in loan default problems. Offsetting lower crop production were higher prices for crop commodities and higher land values.

Stress Among Types of Farm Operations

The 43,700 decline in commercial farms subject to potential loan loss problems in 1987 (table 3) reflects improving conditions and either a shift of farms into the small-size category or the exit of stressed farmers from agriculture. The proportion of commercial farms in financial stress declined only slightly between 1985-86, from 17.0 to 16.5 percent, before declining to 9.6 percent in 1987.

Potential loan losses were concentrated in corn/soybean, beef, and dairy operations. In 1986, nearly 64 percent of potential loan losses could be attributed to those enterprises. That proportion dropped to 56 percent in 1987 and to 41 percent in 1988. The share of total corn/soybean operator debt likely to be written off had declined from 10 percent in 1986 to 4 percent in 1988 (table 4). Table 5 indicates the percentage of stressed commercial farmers in each enterprise type for 1984 through 1988. Cotton and rice enterprises had more than 26 percent of producers showing financial stress during 1984, but this percentage decreased markedly to only 8 percent in 1988. Their earlier financial difficulties reflect large weather-related yield losses in 1986 and some of the highest rates of land devaluation (Louisiana, one of the largest producers, led the Nation with a 27-percent decline in land values in 1986).

While more corn/soybean producers were affected by financial stress than other producers, they posted the largest improvement in loan loss problems (table 3). The nearly 40,000 corn/soybean operations with loan repayment

Table 1–Financial position (based on potential loan losses) of commercial farms, 1988

	Debt/asset ratio				
All	**No debt** (0)	**Low debt** (0-0.4)	**High debt** (0.4-0.7)	**Very high debt** (0.7-1.0)	**Insolvent** (More than 1)
612,873 farms	*147,683 farms*	*326,808 farms*	*92,797 farms*	*27,280 farms*	*18,305 farms*
$71.732 billion in debts		*$34.155 billion in debts*	*$23.156 billion in debts*	*$8.358 billion in debts*	*$6.063 billion in debts*
Full service of debt: *338,927 farms $32.069 billion in debts*	**Financially strong** No potential loan loss *550,800 farms (88 percent of all farms)* *Debt of $54.058 billion (75 percent of all farm debt)*				
Partial service of debt: *94,954 farms $21.678 billion in debts*				**Financially stressed** Potential loan losses of $3.158 billion *62,073 farms (10 percent of all farms)* *Debt of $17.674 billion (25 percent of all farm debt)*	
No service of debt: *178,991 farms $17.985 billion in debts*			**Moderate stress** Potential loan losses of $456 million *43,768 farms (7 percent of all farms)* *Debt of $11.611 billion (16 percent of all farm debt)*		**Severe stress** Potential loan losses of $2.702 billion *18,305 farms (3 percent of all farms)* *Debt of $6.063 billion (9 percent of all farm debt)*

Table 2—Debt at risk and potential lender losses from commercial farms

Year and extent of debt service	Debt/asset ratio: High debt (0.4-0.7)	Debt/asset ratio: Very high (0.7-1.0)	Debt/asset ratio: Insolvent (greater than 1)	Total
		Million dollars		
Lenders' potential loan loss:				
1987--				
Full service	NA	NA	1,392	1,392
Partial service	NA	113	1,339	1,452
No service	193	38	924	1,155
1988--				
Full service	NA	NA	679	679
Partial service	NA	93	1,107	1,201
No service	282	81	898	1,261
		Number		
Farmers with potential loan loss:				
1987--				
Full service	NA	NA	8,726	8,726
Partial service	NA	13,025	8,040	21,065
No service	20,311	5,374	4,911	30,596
1988--				
Full service	NA	NA	4,792	4,792
Partial service	NA	8,463	8,593	14,056
No service	24,478	10,832	7,920	43,229

NA = Not applicable.

Table 3—Potential loan losses by major type of commercial farm, 1984-88

Type of loss and farm	1984	1985	1986	1987	1988
			Million dollars		
Potential loan losses:					
Corn/soybeans	1,430	2,990	2,280	1,104	522
Beef	950	1,380	1,030	711	348
Dairy	1,040	920	730	432	417
Hogs	240	670	580	229	296
Wheat, barley, oats	450	670	320	180	116
Cotton, rice	430	550	480	177	86
Fruit, vegetables, nursery	950	380	450	322	248
All commercial farms facing default[1]	6,850	8,610	6,310	3,999	3,159
			Number		
Operations facing default:					
Corn/soybeans	39,930	35,570	34,130	15,860	13,100
Beef	14,330	14,400	16,020	7,150	10,900
Dairy	24,880	22,210	22,020	12,150	10,580
Hogs	9,390	8,100	5,860	3,790	5,830
Wheat, barley, oats	10,130	9,660	4,980	3,600	5,140
Cotton, rice	5,410	3,820	3,940	2,950	1,880
Fruit, vegetables, nursery	4,480	3,560	3,470	1,840	2,990
All commercial farms facing default[1]	122,510	110,200	104,070	60,390	62,080

[1]Data do not sum to totals because only major types of farms are listed separately.

Table 4—Potential loan losses per farm by major commercial farm type, 1986-88

Type of farm	Potential loan losses					
	Per farm			Share of total debt likely to be written off		
	1986	1987	1988	1986	1987	1988
	Thousand dollars			*Percent*		
Corn/soybeans	67	47	40	10	4	4
Beef	64	87	32	7	5	2
Dairy	33	34	39	4	3	3
Wheat, barley, oats	65	50	33	6	3	2
Hogs	98	57	51	10	5	6
Cotton, rice	122	42	45	14	6	4
Fruit, vegetables, nursery	130	175	83	6	6	5
Potatoes, tobacco, other specialized crops	39	45	90	5	5	7
Sheep, livestock, other	39	50	73	5	4	7
Poultry	75	55	20	2	3	5
U.S. average	61	55	51	7	4	4

Table 5—Commercial farms with potential loan losses in each major enterprise, 1984-88

Type of farm	1984	1985	1986	1987	1988
			Percent		
Corn/soybeans	17.8	17.1	20.4	10.5	9.4
Wheat, barley	13.5	16.7	12.7	11.3	14.0
Cotton, rice	26.6	21.0	23.2	13.3	8.4
Fruit, vegetables, nursery	12.7	10.1	9.7	5.6	7.8
Potatoes, tobacco, other specialized crops	20.9	15.6	19.6	12.4	11.7
Beef	14.1	16.1	16.0	6.5	9.3
Dairy	17.1	15.4	15.7	10.2	9.5
Hogs	23.0	22.1	11.8	10.2	14.6
Poultry	12.3	9.0	14.3	7.7	12.2
Sheep, livestock, other	18.6	11.0	16.2	9.9	11.3

problems accounted for 33 percent of all stressed operations in 1984. Despite the decline in the number of corn/soybean farmers with potential loan losses to about 16,000 in 1987, their loan default problems represented 26 percent of all commercial farmers facing default. By the end of 1988, 13,000 stressed corn/soybean operations represented only 21 percent of all stressed farms. The decline in potential loan losses from $3 billion to $0.5 billion between 1985 and 1988 suggests that the majority of corn/soybean farmers with the most severe default problems ceased operating or restructured debts by 1987-88.

Surging livestock prices beginning in late 1985, accompanied by falling feed prices, contributed to notable financial improvement for beef, dairy, and hog enterprises. The increase in the number of beef farms facing loan default in 1986 was related to large declines in land values in the Southern and Central Plains, the leading cattle feeding regions, as much as to income difficulties. Higher drought-related feed prices and lower hog prices caused about 6,000 more beef and hog producers to experience default problems in 1988.

The decline in dairy producers in financial stress from 17 percent in 1984 to about 10 percent in 1988 indicates slow but steady improvement for milk producers (table 5). Only 3 percent of the total debt held by dairy farmers in 1987 and 1988 was subject to loan default (table 4). Therefore, despite relatively large potential losses, dairy producers may have been in the strongest financial position.

The financial difficulties of corn/soybean producers were a dominant characteristic of stress throughout the farm sector in the mid-1980's. Their financial performance can be contrasted with that of hog producers to shed light on the evolution of recent financial problems in agriculture (table 6).

At the end of 1986, 1 in 5 corn/soybean farms faced potential loan defaults, and nearly 1 in 10 was insolvent. By 1988, those proportions dropped to 1 in 11 and 1 in 30, respectively. While debts declined in 1986, average net cash receipts (cash receipts less cash expenses) fell more than $3,000 from the modest level of $28,530 in 1985. That figure rose to almost $32,000 in 1987 before declining to $17,000 in 1988. Substantial declines in land prices in the Midwest in 1986, accompanied by worsening cash-flows, resulted in little or no financial improvement for most corn/soybean producers between 1984 and 1986. However, higher prices in 1987 and substantially lower debts in 1988 slightly improved the financial position of corn/soybean farmers in the late 1980's.

Weakening land prices resulted in 9- and 12-percent insolvency rates for hog farmers (many of whom also grew corn and soybeans) in 1984 and 1985, respectively. However, the remarkable strength of the hog market in 1986 (record hog-to-corn ratios exceeded 40 percent in September) pushed up average income by $32,000 between 1984 and 1987, led to a more than $20,000 average reduction in debts between 1985 and 1987, and reduced the share of hog farmers with no debt service from 15 to 2.4 percent.

However, lower hog prices and higher feed costs due to the drought halted the financial progress of most stressed hog producers in 1988. In 1988, the financial weakness in the hog sector centered on fewer than 6,000 commercial-size producers. Many had extremely high debt/asset ratios due to debt-financing of new confinement facilities and/or expensive land purchases.

Regional Stress

The central portion of the country experienced the greatest financial stress in the 1984-88 period. About 84,800 of the 122,500 commercial farms in financial difficulty in 1984, or nearly 70 percent, were in the Corn Belt, Lake States, Northern Plains, and Southern Plains regions (table 7). That share rose to 73 percent by 1988, even though the national figure for farms in financial stress declined to 62,100. Financial stress also affected southern and southeastern areas between 1984 and 1986. However, during 1985-86, the number of farmers with default problems declined in all areas except the Corn Belt, Delta, Southern Plains, and Appalachian regions. The smallest decline in absolute value occurred in the Pacific region. In 1987, the number of financially stressed farmers declined in all regions except the Pacific region. Default problems rose in the Corn Belt and Northern Plains in 1988 due to droughts. The Delta and Southeast, benefiting from plentiful rain, experienced much lower levels of default problems in 1988.

Roughly 20 percent of commercial farms in the Corn Belt, Lake States, and Northern Plains faced potential loan losses in 1984-85, but the proportion dropped markedly by 1987. The Corn Belt, Southern Plains, and Northern Plains were the only regions that continued to have higher than average debt repayment problems in 1988. This was due largely to drought-related fluctuations in cash grain

Table 6—Financial performance of commercial corn/soybean and hog farms, 1984-88

Type of farm and performance	1984	1985	1986	1987	1988
			Percent		
Corn/soybeans:					
Share with potential loan losses	18.0	17.0	20.0	10.5	9.4
Share technically insolvent	6.0	9.0	9.0	4.2	3.2
Share with no debt service capacity	12.0	9.0	12.0	4.8	7.3
			Dollars		
Average debts	146,080	151,650	136,740	122,400	106,710
Average net receipts	20,350	28,530	25,260	31,670	17,190
			Percent		
Hogs:					
Share with potential loan losses	23.0	22.0	12.0	10.2	14.6
Share technically insolvent	9.0	12.0	5.0	4.6	4.9
Share with no debt service capacity	15.0	8.0	5.0	2.4	10.8
			Dollars		
Average debts	132,750	142,000	119,560	121,070	119,220
Average net receipts	12,950	28,700	36,920	45,350	20,600

Table 7—Regional changes in commercial farms facing potential loan losses, 1984-88

Region	1984	1985	1986	1987	1988
			Number		
Farms in:					
Corn Belt	32,000	27,120	30,500	14,090	15,810
Lake States	23,100	22,290	18,600	13,440	8,630
Southern Plains	8,700	8,840	10,300	3,380	9,030
Delta	7,400	4,730	5,500	3,680	2,010
Southeast	4,900	5,100	4,500	2,720	1,270
Appalachian	4,600	4,870	5,300	3,820	3,870
Northern Plains	21,000	19,050	15,400	8,650	11,810
Pacific	6,000	4,710	4,200	4,260	2,980
Mountain	7,800	7,010	5,900	3,330	2,970
Northeast	7,000	6,480	4,000	3,020	3,670
United States	122,500	110,200	104,100	60,390	62,080
			Percent		
Share of farms in:					
Corn Belt	18.0	15.0	18.0	8.6	10.1
Lake States	21.0	21.0	20.0	14.5	9.4
Southern Plains	15.0	15.0	22.0	7.2	15.3
Delta	15.0	21.0	17.0	14.7	9.2
Southeast	15.0	17.0	17.0	10.2	4.3
Appalachian	9.0	9.0	15.0	8.2	8.6
Northern Plains	19.0	19.0	16.0	9.4	12.1
Pacific	16.0	11.0	10.0	10.6	7.6
Mountain	15.0	16.0	14.0	7.8	8.4
Northwest	12.0	10.0	8.0	5.9	8.8
United States	17.0	16.0	16.5	9.6	10.1

prices and yields, lower hog prices, and higher feed costs.

While all regions suffered farm loan losses, the absolute amount at risk and the relative incidence of loss were highest in the Corn Belt, Lake States, and Plains regions (table 8). However, the data suggest that potential losses declined in these areas as well.

The concentration of potential loan losses in these regions is not surprising. These areas produce the bulk of the Nation's cash grains and soybeans, whose prices declined sharply during 1985-87. These regions also experienced the greatest growth in debt-financing during the latter part of the 1970's and the greatest increase in farmland values. Much of the debt used to finance purchases in the late 1970's could not be serviced, given the tight financial conditions of many borrowers in the early and mid-1980's. The Midwest and Plains regions experienced the greatest declines in land values during the 1980's, which reduced the value of the collateral backing the farm debt.

Potential loan losses in the Pacific region peaked at $1.7 billion in 1984 (table 8), declined to $460 million by 1986, and remained at about $500 million in 1987-88. The massive decline from 1984 to 1985 reflects major losses in California, the origin of about 90 percent of the Pacific region's default problems in 1984. Average potential loss per farm was roughly $414,000 for Californian farms versus $75,000 for farms in other Pacific States.

California's large exposure to loss reflects major financial difficulties, due to rapid increases in debt use and fluctuating product demand, especially for fruit and nuts. Orchard and vineyard values fell dramatically, as lowered profitability expectations were rapidly capitalized into land values. A large portion of the California losses were experienced by commercial banks (as compared with other lenders) in the mid-1980's.

The incidence of financial stress in the Southern Plains was the opposite of that in California. Potential losses in the Southern Plains were $690 million in 1984 but climbed to more than $1 billion by 1986 (table 8). Both the number of farms facing losses and the losses per farm increased. Agricultural difficulties in the mid-1980's were compounded by declining petroleum prices. In energy-dependent Texas and Oklahoma, declining oil prices depressed business conditions and, in turn, land values and off-farm income. However, farm finances improved in 1987, as default losses declined by nearly two-thirds before stabilizing in 1988.

Table 8—Potential loan losses of commercial farms by region, 1984-88

Region	1984	1985	1986	1987	1988
			Million dollars		
Corn Belt	1,490	1,920	440	870	650
Lake States	750	1,590	1,180	550	340
Southern Plains	690	710	1,050	350	410
Northern Plains	690	1,550	900	570	390
Pacific	1,720	750	460	530	420
Mountain	580	520	360	210	250
Delta	210	520	360	370	160
Southeast	370	460	330	200	90
Appalachian	100	340	150	230	380
Northeast	250	250	80	100	50
United States	6,850	8,610	6,310	4,000	3,160

The Pacific, Delta, and Southern Plains regions generally exhibited the greatest potential loan losses per farm after 1986 (table 9). Such large losses reflect the high-value, capital-intensive nature of the major commodities--such as fruit, vegetables, cotton, and feeder cattle--produced in these regions. The share of debt vulnerable to loan losses in these regions (6 percent in 1988) was higher than the U.S. average (4 percent) as well. However, near record-high cattle prices and timely rains in 1988 contributed to the substantial decline of potential defaults in the Southern Plains and Delta.

Both the amount of potential losses and the number of farmers facing losses declined as lenders took collection action and/or restructured problem debts in the process of working through losses. However, the process of recognizing loan losses was not uniform. Most regions showed the largest potential losses in 1985, followed by improvement in 1986. But, there were exceptions. Loan loss potential in the Pacific and Mountain States declined each year from 1984 to 1987. The data generally indicate that in all regions the bulk of the losses had occurred by the end of 1987. However, lenders still face collection problems on a portion of these loans due to lags in foreclosure and bankruptcy procedures. While lenders may continue to experience additional losses, the losses will be much smaller in virtually all regions.

Major Losses Among States

Surveying States with potential loan losses provides a more precise view of the areas most affected by financial stress (table 10). These areas tend to be in States where agriculture is the dominant industry, such as North Dakota, South Dakota, and Nebraska. States least affected are those with a diverse economic base, such as Illinois and Indiana. The dominance of financial problems in the "central grain belt" is clear: notice the large number of farmers with potential loan losses in States such as Iowa and Nebraska (table 10). The Southeast may have experienced a high incidence of stress, but the magnitude of financial problems in the middle of the country dwarfed problems elsewhere.

Although much improvement is evident, the four States ranking highest in debt problems during 1984-86 held their rankings in 1987-88 (table 10). There were also several major agricultural States with fewer than 3,000 commercial-size operations

Table 9—Potential loan loss statistics of commercial farms by region, 1986-87

	Potential loan loss								
	Per farm			No debt service			Share of total debt likely to be written off		
Region	1986	1987	1988	1986	1987	1988	1986	1987	1988
	-----Thousand dollars-----			*----------Percent----------*					
Corn Belt	47	62	41	32	19	31	7	4	4
Lake States	63	41	40	19	12	37	9	5	3
Southern Plains	109	104	45	18	19	72	5	7	6
Northern Plains	59	65	33	20	39	53	7	5	4
Pacific	109	126	142	18	49	29	5	7	6
Mountain	61	64	84	43	34	39	5	3	4
Delta	67	102	81	59	28	59	12	13	6
Southeast	74	75	72	88	37	52	7	5	3
Appalachian	28	61	99	50	36	9	5	6	9
Northeast	19	34	14	34	29	61	2	2	1
United States	61	66	51	35	29	40	7	5	4

facing loan defaults in 1984-86, the most critical stress years: Michigan, California, Florida, Ohio, Georgia, and North Carolina.

The stability in the ranking of Iowa, Minnesota, Wisconsin, and Texas over time reflected the continuing nature of loan loss difficulties. Among the 12 States with the largest potential losses during 1984-86, the proportion of farms facing losses generally ranged between 17 and 20 percent. The exceptions were Missouri and Minnesota, where 24 percent of commercial farmers faced default, and Illinois, where 12 percent faced default. The true dimensions of the farm financial crisis were perhaps best illustrated by the fact that in Missouri and Minnesota almost one in four commercial farms could have produced a loan loss for lenders during 1984-86. In 10 contiguous Midwestern States, land values declined between 48 and 64 percent during 1981-87. Eight of these States appear in the top 10 ranking of vulnerability to loan loss (table 10). The correspondence between this ranking and the declines in land values illustrates the critical link between stability of land values and adequacy of loan collateral in U.S. agriculture.

In Missouri, half of the farmers facing potential losses were insolvent (half of the 24 percent of farmers facing losses), suggesting that actual losses were a larger than usual proportion of potential losses.

Contrasting the Performance of Stable Farms and Those Facing Default

For every commercial-size farm facing a potential loan loss in 1986, more than five were financially stable (table 11). In 1987 and 1988, 9 of every 10 commercial farms were financially stable. Furthermore, an average of 344,000 farmers fully serviced their debts and had generally low or moderate debt burdens in 1986-88. About 200,000 additional commercial farmers were classified as stable because they had: (1) moderate debt levels (averaging 35 percent of assets) and made some contribution to debt service, or (2) very low debt levels (averaging 10 percent of assets) and adequate collateral to offer to lenders should the need to borrow arise.

Table 10—States most affected by financial stress on commercial farms, 1984-88

	Commercial farms with potential loan losses							
	State ranking[2]		Number of farms		Share of commercial farms		Technically insolvent	
State[1]	1984-86	1987-88	1984-86	1987-88	1984-86	1987-88	1984-86	1987-88
	----Rank----		*------Number------*		*----------Percent----------*			
Iowa	1	1	12,580	6,500	20	12	8	4
Minnesota	2	2	11,510	5,470	24	15	10	5
Wisconsin	3	4	7,690	3,250	18	8	5	3
Texas	4	3	6,100	4,480	17	11	6	4
Missouri	5	9	5,740	2,390	24	9	12	3
Nebraska	6	7	5,390	2,610	17	9	6	2
Kansas	7	8	5,230	2,390	18	9	8	3
Illinois	8	5	4,780	3,220	12	9	4	3
Indiana	9	15	4,070	1,530	18	6	5	3
South Dakota	10	11	4,080	2,200	19	11	6	3
North Dakota	11	6	3,790	3,030	18	15	4	4
Oklahoma	12	14	3,210	1,730	18	13	6	4

[1]States having more than 3,000 farms facing potential loan losses.
[2]States are ranked by severity of potential loan losses; 1 indicates largest potential.

The income position of the 551,000 financially stable farmers in 1988 is striking compared with that of financially stressed farmers (table 11). Stable farmers averaged over $58,000 in combined farm and off-farm income in 1988, compared with about -$8,000 for stressed farmers. These income estimates include off-farm income of over $23,000 per stable farm and under $13,000 per stressed farm, suggesting that financially stressed farmers have been less able to use off-farm income to offset the negative cash income from farming operations. Stable farmers earned nearly $13 billion in off-farm income and nearly $20 billion in cash farm income, while stressed operators earned only about $800 million in off-farm income and -$1.3 billion in cash farm income in 1988. The combined farm and off-farm income of farmers in default was even lower in 1986 (-$860 million).

Financially stable farmers generally appeared to have consolidated their financial position during 1985-88. Average debts were reduced by about $14,000 between 1984 and 1988 (table 12). The 60,000 decline in the number of stable farmers in 1986 was due both to lower commodity prices--shifting some marginal commercial farms into the small-farm classification (estimated at 20,000-40,000 farms)--and to higher rates of farmer retirement, voluntary exits from farming, and foreclosures. However, as a result of better market conditions in 1987, the number of financially stable farmers increased to 569,000. The number declined only about 3 percent in 1988, largely because of the drought's effects on production. Higher prices improved farm incomes and shifted some farms from the small-farm sales class to the commercial-farm class. The 70-percent improvement in cash balances between 1984 and 1988 shows that conditions in 1984-86 were difficult even for typically stable farms.

Negative net cash incomes continued to characterize farms facing potential default. Household cash balances after capital purchases,

Table 11—Financial attributes of stable commercial farms by debt service, 1986-88

Debt service, financial status, and year	Net cash farm income	Off-farm income	Debt	Net worth	Number of farms
	Million dollars				*Thousand*
Full debt service:					
1986	19,670	9,810	34,330	142,140	322
1987	18,128	10,082	36,718	200,709	376
1988	20,845	10,775	30,308	216,060	334
Partial debt service:					
1986	640	880	17,060	31,440	82
1987	858	820	16,058	33,631	76
1988	1,154	883	15,806	38,983	81
No debt service:					
1986	-4,350	940	5,340	51,910	123
1987	-1,855	890	6,881	62,105	117
1988	-2,435	1,149	7,943	72,545	136
Financially stable:					
1986	15,960	11,630	56,730	225,500	527
1987	17,131	11,793	59,656	296,445	569
1988	19,564	12,809	54,060	327,586	551
Default problems:					
1986	-1,710	850	28,360	3,380	104
1987	261	703	18,577	2,262	60
1988	-1,282	793	17,674	4,196	62

loan servicing, and family living expenses remained negative (at about -$55,000) for commercial farmers with default problems in 1988. The 11-percent decline in average debt to about $285,000 during 1984-88 reflects debt reductions and accelerated debt restructuring and liquidations in 1985-88. Many farmers with the most severe debt problems likely ceased operating prior to early 1989, when the FCRS 1988 data were collected. Declining land values continued to produce high, but declining, insolvency rates in 1985-86. Farm production expenses decreased by nearly $20 billion between 1984 and 1987. Reduced interest expenses accounted for more than $5 billion of this decline. Financial trends in aggregate U.S. data indicate that farmers' cost-cutting and debt payments, coupled with lenders' forbearance and restructuring, were key elements behind the improving financial conditions of both stressed and stable farmers.

Socioeconomic Characteristics

Numerous analyses of farm stress have focused on financial or farm production characteristics. However, the most critical issues during periods of widespread farm financial difficulties center on the people involved.

During the mid-1980's, default problems were concentrated in the younger portion of the farm population (table 13). Nearly 60 percent of the operators most likely to default during 1986-88 were under 45 years old, while 62 percent of financially stable operators were 45 or older. However, 20 percent of operators with potential losses were 55 years of age or older.

These figures are not surprising, since the principal debt instrument for most young farmers is a land mortgage. Improved equity occurs from either increased asset values or decreased debt levels. As scheduled payments are made over time, the outstanding balance of the mortgage is reduced, giving lenders an inherently stronger position. The growth in equity through loan principal repayments provides a cushion to absorb subsequent declines in property values. The relationship between age and debt, however, should not be interpreted as indicating that older farmers did not experience significant emotional stress. Erosion of equity can represent a large reduction in the major component of a farmer's retirement savings.

The average age of farm operators has increased over the last few years. The exodus from farming of a large group of young farmers due to financial stress in the 1980's would further raise the average age of remaining operators. A high level of default problems among younger operators also raises the issue of who will be producing agricultural commodities as older farmers retire during the next 10-20 years.

Socioeconomic characteristics of financially stable farmers contrast with those of farmers facing potential loan losses (table 13). While virtually the same proportion of farmers in each category is considered full-time operators, those in a strong financial position earned 45 percent more in off-farm income in 1988. Off-farm income of about $23,000 constitutes most of the average net operating margin of financially healthy farmers.

As noted above, younger farmers are much more likely to default on debt obligations. Younger farmers also have larger households. They are also slightly more likely to operate a sole proprietorship, which reflects a lower economic incentive to incorporate. The high proportion of FmHA debt among farmers with default problems suggests that the financial performance of these operators was not viewed as strong to begin with, as they did not qualify for full credit with other lenders (FmHA is mandated by legislation as the lender of last resort). Also, some FmHA borrowers started out with private financing, but received emergency loans from FmHA to cover subsequent financial difficulties.

Two critical factors underlying the problems of farmers likely to experience losses are the financial burdens of real estate debt and land rental expenses. The ratio of sales to assets of these farmers averaged 0.41 in 1986-88, nearly twice the 0.23 ratio among stable farmers. Farmers with default problems also spent nearly 50 percent more on rent than did stable farmers. Sales levels for both groups did not differ markedly, but debt levels of farmers facing default were more than twice those of financially stable farmers. Interest expenses took 15 percent of sales for farmers facing default in 1988 but only 7 percent for financially stable farmers.

Government Payments and Farm Financial Stress

One of the paradoxes of the mid-1980's farm crisis is that farm income reached record highs since 1985, while large numbers of farmers fell into

Table 12—Average debt service and cash balances among financially stable and stressed commercial farms, 1984-88

Financial status and item	Unit	1984	1985	1986	1987	1988
Financially stable farms:						
Number of farms	Number	599,210	587,840	526,690	568,803	550,795
Average debt	Dollars	112,600	112,340	107,700	104,881	98,145
Share with debt/asset ratio under 0.4	Percent	83	79	79	83	86
Average net operating margin	Dollars	26,390	37,290	30,300	30,117	35,520
Average cash balance less debt payments and living expenses	do.	8,620	25,570	21,790	35,685	27,918
Financially stressed farms:						
Number of farms	Number	122,510	110,200	104,070	60,387	62,076
Average debt	Dollars	320,570	315,790	272,520	307,308	284,719
Share technically insolvent	Percent	31	42	36	36	29
Share with no debt service	do.	67	56	59	51	70
Average net operating margin	Dollars	-29,490	-13,840	-16,430	-4,316	-20,652
Average cash balance less debt payments and living expenses	do.	-69,000	-47,100	-48,510	-18,051	-54,092

Table 13—Characteristics of commercial operators by financial position, 1986-88

Characteristic	Financial position: Stable 1986	Stable 1987	Stable 1988	Loan default 1986	Loan default 1987	Loan default 1988
			Dollars			
Socioeconomic characteristics:						
Off-farm income	22,078	20,732	23,255	8,189	11,638	12,783
			Number			
Members in household	3.2	3.2	3.1	3.7	3.6	3.5
			Percent			
Age distribution--						
Under 35	16	15	15	32	28	22
35-44	22	21	22	31	31	36
45-55	24	25	25	21	22	21
55 or over	38	39	37	16	19	20
Share of full-time operators	75	74	74	77	77	77
Share of sole proprietors	80	83	83	86	85	86
			Dollars			
Sales, finances, and income:						
Average sales	138,589	142,166	146,937	119,972	155,117	137,410
Average assets	535,848	626,055	692,896	305,031	344,759	352,307
Average debt	107,703	104,881	98,145	272,517	307,308	284,719
Average net worth	428,145	521,174	594,751	32,514	37,451	67,588
Average net operating margin	30,300	30,117	35,520	-16,430	-4,316	-20,652
Average cash income surplus	21,791	35,865	27,918	-48,510	-18,051	-54,092
			Percent			
Financial ratios:						
Interest to sales	9	7	7	20	15	15
Land rent expense to sales	10	10	10	15	11	15
Capital investment to sales	8	9	9	8	7	9
Real estate interest to sales	6	5	5	12	9	9
FmHA debt to sales	7	9	7	56	48	57

financial difficulty. A scenario in which a disproportionately small share of Government payments went to those in difficulty would explain how record income and record financial stress could coexist. However, on a per farm basis, a slightly greater share of direct Government and CCC payments flowed to financially stressed farms (table 14). More total payments went to financially stable farmers, reflecting their greater numbers. An average of 70 percent of financially stressed farmers received direct Government payments during 1986-88, compared with 63 percent of financially stable farmers. Because proportionately more farmers in financial difficulty received payments, abruptly terminating payments would hurt more farmers with potential losses than stable farmers.

Several interpretations of the role of Government payments during the 1980's farm financial crisis are plausible. There also are several economic rationales for financially stable farmers receiving the most Government payments (85 percent) during 1986-88. The $10-$16 billion annual gross payment to financially stable operators during 1986-88 prevented the number of defaulting farmers from increasing even more. Government payments to financially stable operators enabled them to maintain scheduled land mortgage payments and thus provided a stabilizing effect on land values across the farm sector (about 75 percent of stable farmers are indebted). An end of the decline in land values at the end of 1986 was crucial to the large decline in farmers defaulting in 1987.

An alternative perspective might suggest that Government payments were not effectively targeted to financially troubled farmers during the mid-1980's. However, Government payments have never been targeted to the management ability of farmers or to the amount of debt they could incur in their operation. Because Government commodity programs have two objectives, supporting farm incomes and stabilizing commodity prices through supply control, the large increase in payments went mostly to farmers producing large quantities of program commodities. These farmers did not necessarily need the payments to manage debt burdens. During 1986-88, farmers facing default received only about 16 percent more direct and gross CCC payments than did financially stable farm operators.

Both perspectives offer useful insights regarding the role of Government payments during the 1980's farm financial crisis. What cannot be disputed is that the high level of Government payments stabilized the farm sector's finances in the mid-1980's.

Table 14—Average Government payments to operators, 1986-88

Item	Unit	Financial position					
		Stable			Loan default		
		1986	1987	1988	1986	1987	1988
Number of farms	Number	526,700	568,803	55,795	104,100	60,387	62,076
Received direct payments	Percent	59	64	67	67	72	71
Received CCC payments	do.	28	34	13	38	39	17
Direct payments:							
To all farms	Million dollars	5,982	8,989	7,274	1,381	1,045	982
Per farm	Dollars	11,357	15,804	13,027	13,269	17,312	15,812
Gross CCC payments:							
To all farms	Million dollars	5,811	6,708	2,867	1,622	690	368
Per farm	Dollars	11,051	11,792	5,205	15,585	11,426	5,922
All Government payments:							
To all farms	Million dollars	11,803	15,697	10,141	3,003	1,735	1,350
Per farm	Dollars	22,409	27,596	18,412	28,847	28,731	21,748

Potential Loan Losses of Small Farms

The number of small farms identified in the FCRS increased nearly 20 percent in 1987 and another 10 percent in 1988 (table 15). Most of the increase was likely due to two factors: more comprehensive coverage of small farms in the survey, and a shift of at least 20,000-40,000 farms from the commercial-size to the small-size classification. The shift between sales classes tends to occur during periods of commodity price declines, such as in 1984-87. This downward shift in size is also evidenced by the increase in average debt per small farm between 1984-86, the same period in which debt declined rapidly in the entire farm sector. The widespread decline in commodity prices in the mid-1980's meant that many operations with former sales levels of $40,000-$60,000 sold under $40,000 worth of products in 1987. Lower sales volumes often make small farmers more dependent on off-farm incomes than on farm earnings.[6]

[6]These projections may understate the loan problems of small farms because 20-40 percent of small farms were not represented in the FCRS. However, most of the undercount is associated with farms with under $10,000 in sales. Undercounting for this smallest farm size would add less than $10 million to total loan losses.

The shift of many commercial-size farms into the small-farm category was the major factor increasing this group's total potential loan losses by nearly 70 percent between 1984 and 1986. Small farms with default problems were projected to have potential loan losses typically in the $12,000-$15,000 range in 1988. The shift also tended to stabilize or increase the average level of debt and commodity sales (including direct Government payments). In contrast to commercial-size farms, the trends among small farms were for stable or increasing debt, sales, and loan losses, partly due to the expanding number of farms classified as small.

In 1988, nearly $250 million (45 percent) of the potential loan losses of small farms came from about 16,300 operations with sales of $20,000-$40,000 (table 16). Seventy-five percent of loan losses from small farms were projected to come from farms with sales of $10,000-$40,000. Only about 4 percent of farms with sales under $10,000 were affected by potential loan losses. The survey data strongly suggest that during 1986-88, loan loss difficulties were not a major problem for the approximately 1 million farmers with annual sales under $10,000.

If financial difficulties among small farms seem less acute than those of large farms, it is because of

Table 15—Financial trends of small farms, 1984-86

Trend of small farms	Unit	1984	1985	1986	1987	1988
Total:						
Number of small farms	Number	969,300	852,600	876,670	1,042,963	1,151,670
Number with potential loan losses	do.	56,290	43,670	49,330	39,817	42,640
Share:						
With potential loan losses	Percent	5.8	5.1	5.6	3.8	3.8
With no debt service capacity	do.	4.8	3.7	4.0	2.8	2.8
Technically insolvent	do.	1.6	1.9	2.1	1.1	.9
Amount of potential loan losses:						
From stressed small farms	Million dollars	450	640	760	578	553
Per stressed small farm	Dollars	7,960	14,580	15,390	14,528	12,968
Average for all small farms:						
Debt	Dollars	14,540	14,720	15,310	15,098	14,774
Cash farm expense	do.	11,050	10,780	10,420	9,475	9,538
Commodity sales and direct Government payments	do.	8,124	7,900	8,090	7,828	7,628

contrasting business characteristics. In 1988, the 43,000 small farms with potential loan losses held less than 15 percent of the $21 billion total vulnerable debt in agriculture (table 17). Furthermore, in 1986 and 1987:

- Small farmers with default problems sustained lower losses (negative cash incomes) than did large farmers with default problems.
- Small farmers with default problems earned more in off-farm income and were more likely to be part-time farmers than were large farmers with default problems.
- While 60 percent of large farmers with default problems were in the Midwest and Northern Plains, small farmers with default problems were more evenly distributed among regions.

Comparison of the States with the largest number of small and commercial-size farms with default problems confirms the wide distribution of small farms' financial difficulties. The 12 States with the most pronounced financial difficulties among commercial-size farms were in the Midwest and Plains regions. However, small farms with default problems extended into the Southern Plains and Delta regions (table 18). This is indicated by Oklahoma's 11th place ranking during 1984-86 and 1st place ranking in 1987-88. Mississippi, which averaged fewer than 1,500 small stressed farms between 1984 and 1986, ranked eighth in 1987-88. However, Missouri and Kentucky ranked in the top three throughout 1984-88. The incidence of insolvency decreased in most States in 1987-88. However, the incidence increased markedly in Oklahoma, partly because the collateral value of farmland assets declined.

Potential Lender Losses

The financial stress model of potential loan losses was extended to correspond to problem loans reported by lenders. Such loans may be considered: (1) past-due, with or without a reasonable expectation of becoming current, or (2) inadequately secured by loan collateral (assets). The default projections generated from the model can be contrasted with loan losses reported by agricultural lenders. This section reviews the extent of the problem debts by lender. Analysis also focuses on FCRS farm data for farmers borrowing from the Farm Credit System (FCS) and the FmHA. Policy issues involving the restructuring of these lenders became critical during the mid-1980's.

Table 19 shows the extent of problem debts and potential loan losses for the major lenders between 1984 and 1988. Problem debts declined from $26 billion in 1984 to $17 billion in 1988. Between 1985 and 1987, the FCS experienced the largest reduction (almost $5 billion) in problem debts of ongoing farmer borrowers. The 59-percent reduction from 1984 to 1988 was also the largest among all lenders. Potential loan losses declined nearly 80 percent for the FCS between 1984 and 1988.

Life insurance companies also benefited from larger than average reductions in problem debts during 1985-88 (down about 58 percent) and potential loan losses (down about 80 percent). Lenders other than FmHA tended to have default problems constituting between 17 and 25 percent of farm loans in 1988 (table 20). However, only 2-4 percent of portfolios of commercial banks, life insurance companies, the FCS, and individual lenders were likely to be written off. The reduction in default problems among ongoing farmers borrowing from all lenders other than FmHA indicates the striking improvement in farm finances after 1986.

Default problems of ongoing farmers borrowing from the FCS improved in each of the 12 farm credit districts, except Louisville (table 21). There was no consistent pattern of reduction in potential FmHA loan losses between 1985 and 1988. However, anticipated loan losses of ongoing farmers borrowing from FmHA were more than 60 percent lower in 1988 than in 1985. Note that operators of ongoing farms constitute a relatively small proportion of the FmHA's problem loans. This is probably because a large volume of FmHA emergency loans and loans to farmers that have ceased farming are now in default.

Between 1986 and 1988, there was less improvement in FmHA default problems in States served by the farm credit district banks of Spokane, Sacramento, and Louisville than in States in other districts. The status of their problems may be consequences of a slower rate of recovery in income and slower appreciation in land values than in most of the midwestern corn/soybean production regions.

Table 16—Distribution of potential loan losses farms by operation size, 1986-88

Sales of small farms and year	Small farms with potential loan losses: Total	Small farms with potential loan losses: Share of small farms	Total potential loan losses	Amount of potential loan losses: Per farm	Amount of potential loan losses: Loan loss to total debt[1]
	Number	*Percent*	*Million dollars*	*Thousand dollars*	*Percent*
$20,000-39,999:					
1986	16,950	9	437.8	25,830	7
1987	12,299	6	241.4	19,627	4
1988	16,345	7	246.0	15,054	3
$10,000-19,999:					
1986	21,980	9	208.8	9,500	5
1987	11,314	4	247.7	21,893	5
1988	12,589	4	171.2	13,604	3
$5,000-9,999:					
1986	5,900	3	91.2	15,480	4
1987	9,885	4	46.3	4,687	1
1988	9,032	3	118.1	13,079	4
Under $5,000:					
1986	4,900	2	23.1	4,720	3
1987	6,319	2	60.8	9,623	4
1988	4,677	1	17.5	3,747	1

[1]Potential loan loss relative to total debt of each sales class.

Table 17—Financial status of commercial and small farms with potential loan losses, 1986-88

Item	Unit	Commercial farms: 1986	Commercial farms: 1987	Commercial farms: 1988	Small farms: 1986	Small farms: 1987	Small farms: 1988
Debt:							
All farms	Million dollars	28,360	18,557	17,674	3,260	2,676	3,041
Per farm	Dollars	217,520	307,308	284,719	65,610	67,203	71,311
Potential loan loss:							
All farms	Million dollars	6,310	3,999	3,159	760	596	553
Per farm	Dollars	55,240	66,321	50,883	15,310	14,974	12,968
Characteristics:							
Share under 35 years of age	Percent	32	28	22	38	23	35
Share of full-time operators	do.	77	77	77	33	20	28
Average number in household	Number	3.7	3.6	3.5	3.9	3.4	3.2
Income and expenses:							
Average net cash farm income	Dollars	-16,430	-4,316	-20,652	-4,990	-3,736	-2,660
Average off-farm income	do.	8,190	11,638	12,783	13,470	15,082	15,580
Average sales	do.	119,970	155,117	137,410	7,990	7,213	7,821
Average operating expenses	do.	150,030	174,745	173,253	15,320	13,271	15,344
Average interest payments	do.	23,630	23,811	21,481	5,150	3,504	4,359
Average Government payments:							
Direct payments	do.	13,270	17,312	15,812	960	1,675	2,289
Gross CCC payments	do.	15,590	11,426	5,922	860	592	164
Share of farms located in:							
Midwest	Percent	62	60	60	48	44	37
South	do.	25	10	20	35	26	26

Table 18—States most affected by financial stress on small farms, 1984-88

State[1]	Small farms with potential loan losses: State ranking[2] 1984-86	State ranking[2] 1987-88	Number of farms 1984-86	Number of farms 1987-88	Share of small farms 1984-86	Share of small farms 1987-88	Technically insolvent 1984-86	Technically insolvent 1987-88
	Rank		*Number*		*Percent*			
Minnesota	1	5	4,188	2,207	11	5.6	3	[3]
Missouri	2	2	3,093	2,457	6	4.4	1	[3]
Kentucky	3	3	2,219	2,254	6	3.8	3	[3]
Texas	4	7	2,636	2,059	3	1.8	1	[3]
Iowa	5	4	2,546	2,253	10	7.4	3	2
Wisconsin	6	12	2,389	1,323	9	4.6	3	[3]
Indiana	7	16	2,371	1,035	7	3.3	3	[3]
Illinois	8	10	2,231	1,334	9	4.5	3	1
Kansas	9	11	2,097	1,323	8	5.6	3	2
Tennessee	10	6	2,067	2,148	5	3.0	3	1
Oklahoma	11	1	1,977	3,926	6	10.6	2	4
Nebraska	12	9	1,783	1,351	12	9.1	5	2
South Dakota	13	23	1,756	776	19	9.8	7	6
Pennsylvania	14	20	1,797	865	7	2.3	1	[3]
Ohio	15	13	1,627	1,211	5	3.3	2	[3]
Mississippi	[4]	8	[4]	1,611	[4]	5.1	[4]	[3]

[1]States with over 1,500 small farms facing potential loan losses.
[2]States are ranked by severity of potential loan losses; 1 indicates largest potential.
[3]Less than 0.5 percent.
[4]Fewer than 1,500 small farms with potential loan losses in 1984-86. Washington and Colorado, with approximately 1,500 defaulting small farms, ranked 14th and 15th during 1987-88, but did not have 1,500 stressed farms during 1984-86.

Table 19—Lenders' problem debts and potential loan losses on commercial farms, 1984-88

Item and lender	1984	1985	1986	1987	1988[1]
			Million dollars		
Problem debt held by:					
Farmers Home Administration	4,769	8,612	6,735	4,734	4,901
Farm Credit System	8,200	8,878	6,823	4,215	3,366
Commercial banks	7,122	8,485	6,700	5,303	6,082
Life insurance companies	2,879	4,632	3,217	1,781	1,623
Individuals	3,123	4,003	3,356	2,135	1,449
All lenders	20,093	34,610	26,831	18,168	17,421
Potential loan losses to:					
Farmers Home Administration	1,139	2,793	1,828	1,236	1,025
Farm Credit System	2,231	2,057	1,502	923	491
Commercial banks	1,703	2,080	1,668	1,153	1,110
Life insurance companies	1,059	1,506	904	397	307
Individuals	628	301	409	290	225
All lenders	6,850	8,610	6,310	3,999	3,159

[1]Estimates based on 1988 FCRS data.

Table 20—Share of lenders' farm loans comprised of problem debts and potential loan losses on commercial farms, 1984-88

Item and lender	1984	1985	1986	1987	1988
			Percent		
Problem debt share of farm loans by:					
Farmers Home Administration	54	57	55	39	45
Farm Credit System	31	30	24	21	17
Commercial banks	36	32	30	22	25
Life insurance companies	41	30	24	19	22
Individuals	32	47	32	21	17
All lenders	37	34	32	24	25
Potential loan loss share of farm loans by:					
Farmers Home Administration	13	18	15	10	9
Farm Credit System	14	7	4	5	2
Commercial banks	9	8	7	5	4
Life insurance companies	14	7	4	2	3
Individuals	6	7	4	3	3
All lenders	10	9	7	5	4

Table 21—Potential loan losses in each farm credit district by FCS and FmHA lender, 1984-88

FCS district	FCS					FmHA				
	1984	1985	1986	1987	1988	1984	1985	1986	1987	1988
					Million dollars					
Springfield	46	44	16	10	4	46	29	20	14	3
Baltimore	31	68	11	11	13	13	77	8	42	9
Columbia	167	137	47	28	8	69	280	248	83	54
Louisville	137	123	123	144	148	135	113	96	123	154
Jackson	59	78	18	90	8	91	192	185	159	87
St. Louis	134	132	91	33	27	101	310	249	154	83
St. Paul	315	410	453	158	105	164	497	293	308	153
Omaha	383	315	265	112	40	154	599	339	147	226
Wichita	159	281	210	72	19	172	351	182	100	32
Texas	86	44	139	121	37	138	142	98	56	45
Sacramento	709	315	96	88	60	12	110	29	23	59
Spokane	96	108	33	54	23	45	91	82	25	109
Total	2,231	2,056	1,501	923	491	1,139	2,793	1,828	1,236	1,025

The Farmers Home Administration and the Farm Credit System

The FmHA and the FCS are Government-assisted or Government-associated institutions providing credit to agriculture. Both institutions experienced major financial reversals from farmers' inability to repay debts. The FCRS provides insight into these lenders' loss absorption. Since the survey measures the condition of ongoing farms, the data can be used to project possible future losses for lenders. Operators who left farming are not included in the sample. Therefore, default estimates may be understated, since lenders may be in the process of recognizing losses from discontinued or foreclosed operations.

Differences between FmHA and FCS procedures for dealing with farmers in financial difficulty complicate analyses of loan defaults. For example, court orders during the mid-1980's prevented FmHA from instituting collection action against farm borrowers who defaulted on loan repayment obligations. FmHA also may have extended their exposure to default by refinancing farmers unable to make payments and by buying out the interest of other lenders with first claims against assets. These forbearance policies, in combination with legal delays, left FmHA with large potential losses. Farmers were also affected, as initiation of FmHA foreclosure action was delayed for 1 or more years. On the other hand, the individual institutions within the FCS were required to recognize losses when they were first anticipated rather than when the losses were actually written off. Thus, FCS lenders typically recognized loan losses earlier than did the FmHA.

The FCRS significantly underrepresents total loss exposure for both lenders, but particularly for FmHA. Many FmHA borrowers are no longer farming and do not appear in the survey. Furthermore, both institutions acquired substantial amounts of property on which they accrued losses during the mid-1980's. Since the survey does not view FmHA or FCS as operators of the acquired farms, there is no reporting of any additional loss exposure on those properties. However, the FCRS data provide useful information on loss exposure for property still held by operators.

FmHA had a significantly greater relative exposure to loss, which is expected given its status as the agricultural lender of last resort. During 1986-88, about 27-40 percent of farmers with FmHA loans faced the prospect of loan losses, versus 13-19 percent of farmers with FCS loans (table 22). Since many farmers borrow from several lenders, many farmers unlikely to repay their debts owed money to both FmHA and FCS. FmHA had relatively greater exposure to loss if land mortgages were involved. Federal land banks are required to have the first claim on land on which they issue mortgages. Where FmHA and FCS both have liens on a defaulting farm, FmHA would ultimately recognize a larger share of potential losses since the senior lienholder (FCS) would be repaid first.

Potential losses and problem debts differed significantly between FmHA and FCS. While the average total debt outstanding for each lender was roughly comparable, the average debt/asset ratio of FCS borrowers was significantly lower, indicating the typical FCS borrower's greater solvency position. Potential loan losses per farm were higher for FCS borrowers, but those farmers had more sources of borrowed funds. Therefore, the FCS's loss exposure was only 34 percent of potential defaulted debt in 1988. The inability of FmHA borrowers to acquire credit from commercial sources resulted in a greater share of FmHA loans facing potential losses (53 percent of the FmHA potential default debt in 1988).

Table 22—Financial characteristics of commercial farms with FmHA and/or FCS loan, 1986-88

Characteristic	Unit	FmHA			FCS		
		1986	1987	1988	1986	1987	1988
Borrowers:							
Number of ongoing farms borrowing	Number	118,367	123,429	104,550	191,227	175,157	165,774
Share with potential loan losses	Percent	40	27	29	19	13	14
Share technically insolvent	do.	18	11	10	7	6	4
Share with no debt service capacity	do.	22	13	18	9	5	9
Share of full-time operators	do.	82	81	81	77	79	75
Average net cash farm income	Dollars	8,107	15,939	18,249	19,572	32,270	27,918
Direct Government payments	do.	13,765	17,133	16,447	15,576	20,155	17,478
Net CCC payments	do.	7,945	3,603	-3,824	11,798	3,251	-4,749
Average debt	do.	219,764	216,452	213,302	231,890	221,309	210,703
Total debt share of assets	Percent	54	45	43	38	32	28
Lenders:							
FmHA share of total debt	Percent	47	45	48	NA	NA	NA
FCS share of total debt	do.	NA	NA	NA	54	52	55
Average potential loan loss	Dollars	64,708	72,853	63,430	82,774	89,922	60,270
Potential loss on FmHA loans	Percent	63	51	53	NA	NA	NA
Potential loss on FCS loans	do.	NA	NA	NA	52	44	34

NA = Not applicable.

FCS borrowers also had a greater capacity to meet debt obligations. Average net cash farm income of FCS borrowers was nearly $10,000 higher than that of FmHA borrowers. Government payments were a critical factor in the level of farm income of borrowers of both lenders. But during 1986-88, FmHA borrowers received slightly lower direct Government payments than did FCS borrowers.

One should expect FmHA to have a greater proportion of borrowers in danger of default. However, the potential loan losses on 29-40 percent of ongoing farmers borrowing from FmHA during 1986-88 suggest that even greater losses exist for the entire FmHA farm loan portfolio. FmHA borrowers excluded from the FCRS are even more likely to be delinquent, since these borrowers likely no longer farm but still have farm loans. FCS losses are proportionately smaller. While the FCS does not have a mandate to make higher risk loans, the FCS also does not have a direct claim on the resources of the Federal Government as a backstop.

Loan Loss Reporting by Lenders

Actual lender loan loss estimates can be derived from data reported by the various farm lenders. This section estimates actual lender losses and compares estimates based on the FCRS potential loan loss model with the lender-reported data.

Recognition of loan losses has become a complex issue in financial accounting. One or several missed loan payments cause a loan to become delinquent. Three classes of loan delinquencies are: accruing (fewer than 90 days past-due), nonperforming-accruing (90 days or more past due), and nonperforming-nonaccruing (not accruing interest). If a delinquent loan is not likely to be repaid in full, lenders create a contra-asset account, an allowance for loan losses, to offset anticipated losses on the loan asset. When the loan is foreclosed or restructured, the amount of the loss is charged off. A chargeoff recognizes the actual principal and accrued interest loss, reducing the allowance for loan losses account by the amount of the chargeoff.

Lender loan losses are typically reported as net losses; that is, chargeoffs less recoveries. But the recent stabilization and improvement of land values may present a challenge to correct interpretation of reported net loan losses and recoveries of past losses. For example, in a foreclosure, the mortgage amount less the chargeoff becomes the book value of the property. The asset is then reclassified on the lender's balance sheet. Whereas the mortgage value was included in an asset account as loans receivable, the foreclosed property is listed as other real estate owned. Furthermore, the foreclosed property may be periodically reappraised, and additional losses may be charged off if the value declines.

If a foreclosed property is later sold for an amount equal to the amount of the existing mortgage on which the lender foreclosed, the lender may report full recovery of the previous chargeoff. However, if the property later sells for an amount greater than the original mortgage (due to appreciating land values, for example), the lender may still report the recovery of the chargeoff, but the amount of the sale above the original mortgage will be identified as a gain on the sale of other real estate owned. This suggests that future loan losses will be negative if land values continue to rise in response to economic improvement in the farm sector. That is, chargeoffs in a given period may be lower than the amount recovered during that period from past losses. However, recovery of loan losses cannot exceed past chargeoffs. In an economic sense, any gains from the sale of previously foreclosed property should be included in what might be defined as net lender loan gains.

The instructions provided to commercial banks for reporting delinquencies and loan losses indicate that this somewhat subjective accounting procedure relies on the judgment of the lender. Three Federal banking agencies, the Board of Governors of the Federal Reserve System, the Federal Deposit Insurance Corporation, and the Office of the Comptroller of the Currency of the U.S. Department of the Treasury, make common use of the Consolidated Reports of Condition and Income (call reports) that must be filed quarterly by every insured commercial bank. The Federal Financial Institutions Examination Council approves the forms on which the banks report and also issues instructions for completion.

Banks are instructed to consider loans past-due when either interest or principal is unpaid for 30-60 days, depending on the loan type and repayment schedule. Reporting institutions are allowed greater flexibility in assigning loans to nonaccrual status. According to the Federal Financial Institutions Examination Council:

> ...loans are...in nonaccrual status if: 1) they are maintained on a cash basis because of deterioration in the financial position of the borrower; 2) payment in

> full of interest or principal is not expected; or 3) principal or interest has been in default for a period of 90 days or more unless the obligation is both well secured and in the process of collection. A debt is well secured if it is secured: 1) by collateral in the form of liens or pledges of real or personal property, including securities, that have a realizable value sufficient to discharge the debt (including accrued interest) in full; or 2) by the guaranty of a financially responsible party. A debt is in the process of collection if collection of the debt is proceeding in due course either through legal action, including judgement enforcement procedures, or in appropriate circumstances through collection efforts to result in payment of the debt or in its restoration to a current status *(2)*.

Other lenders generally follow a similar procedure for reporting nonaccrual loans. The FCS reported a decrease in nonaccrual loans during 1987, following significant increases during 1985 and 1986. Additions of loans to nonaccrual status continued in 1987 and 1988, but the total nonaccrual loan amount declined.

Rising farm incomes helped reduce loan delinquencies. Some nonaccrual loans were completely or partially paid off, while a large number were restructured and reinstated to full accrual status. Continued improvement in the general agricultural economy will greatly reduce the FCS nonaccruals, as evidenced by the Summary Report of Condition and Performance issued for 1987 by the Farm Credit Corporation of America:

> Approximately one-fifth of the System's nonaccrual loans are current as to principal and interest as of December 31, 1987. These loans remain in nonaccrual status because significant doubt or uncertainty exists regarding the ability of borrowers of such loans to meet their next contractual payment, many of which are due only on an annual or semiannual basis. Many of these loans represent recent restructuring of troubled loans which remain in nonaccrual status until borrowers demonstrate they can comply with the new loan terms. The financial position, repayment capacity and payment history of these borrowers will continue to be closely monitored to determine whether subsequent transfer to accrual status is warranted. The majority of these loans are on a "cash basis" for recognition of interest; that is, interest income is recognized only when a cash payment is received *(1)*.

The decision to move a loan to nonaccrual status or to restructure a delinquent loan can be costly to stockholders of the affected financial institution. The decision typically requires a considerable degree of judgment. Price and income variability in agriculture often transfers farms between loss and profit columns in the space of 12 or fewer months, as evidenced by the large losses in the beef sector in 1985 being replaced by solid profits in 1986 and subsequent record-level profits for many producers in 1987.

Recent changes in accepted accounting practices have lengthened the process of recognizing loan losses. For example, "FASB 15" permits lenders to recognize losses on restructured loans over a multiyear period.[7] Recognition of loan losses also can be more complex because of litigation. Recent class-action lawsuits have resulted in FmHA and other lenders limiting or suspending action on farm foreclosures. Enactment of legislation designed to protect the interest of farmers, such as requiring financial counseling or binding arbitration to settle disputes, has also made recognition of loan losses more complex in some States.

Loan Defaults and Estimated Loan Losses

Estimated total loan losses for agricultural lenders are presented in table 23. Chargeoffs of farm loans are reported directly by some lenders. Data on FmHA loan losses are taken from a General Accounting Office evaluation of FmHA farm program debt, delinquencies, and loan losses through June 30, 1989 *(13)*. The Farm Credit Corporation publishes loan losses for the FCS. Small commercial banks have reported losses

[7]Statement No. 15 of the Financial Accounting Standards Board, "Accounting by Debtors and Creditors For Troubled Debt Restructuring," issued by the standard setting body of the accounting profession in January 1977. If the value of the restructured principal and interest payments exceeds the original loan principal outstanding, then the loss due to loan restructuring can be deducted annually as the loss occurs. This practice also can be applied under other selected criteria.

on all agricultural loans since 1984, while large banks have reported losses on only non-real-estate loans. Cumulative loan losses for these lenders were estimated to have been $9.8 billion during 1984-87.

Losses by life insurance companies were not reported directly. These were estimated to be 30 percent of reported foreclosures *(8)*. Losses incurred by individuals and other lenders were estimated to reflect the same percentage of the decrease in real estate and non-real-estate debt reported by the FCS. Estimates of losses incurred by individuals and other lenders were probably understated, since seller-financing of real estate accounted for over two-thirds of the debt in this category. Much of this debt was incurred from extending second mortgages to assist buyers in purchasing farmland. The true extent of defaults on these mortgages and the subsequent return of the property to the seller is unknown, but anecdotal evidence suggests that it may have been extensive.

The results in this report are consistent with prior estimates of lender loan losses. Previous studies estimated losses of $6.9 billion experienced by the FCS, FmHA, and commercial banks over 1984-86 *(3, 7)*, compared with $7.5 billion for all lenders presented here. The shares of agricultural debt held by these lenders had similar proportions of loan losses (*7*, pp. 530-32). Assuming that other lenders had similar loan loss experiences, cumulative loan losses for the farm sector were estimated to be about $11 billion during 1984-86.

Including 1987 data would raise cumulative loan losses to about $14-$16 billion *(3)*. In addition, loan losses during 1980-83 likely reached $2 billion, although losses for FCS and FmHA (the only lenders reporting) were slightly less than $1 billion.

Estimates presented here indicate loan losses of almost $16 billion between 1981 and 1988, with almost $15.5 billion of these occurring in 1984-87.

Comparing Trends: Potential and Actual Default Losses

Estimated potential loan losses rose from $6.9 billion to $8.6 billion between 1984 and 1985, then declined to $6.3 billion in 1986, $4 billion in 1987, and $3.2 billion in 1988 (table 3). The outlook for losses was bleakest when viewing 1985 farm financial conditions. By 1987, however, loss exposure from ongoing producers had fallen by 60 percent. This rapid improvement occurred as lenders worked through problem loans and as income and collateral values rebounded in late 1986 and 1987.

The pattern of actual loan losses is consistent with the forecast of potential losses, in that more than $9 billion of the over $19 billion 1984-88 cumulative losses occurred during 1985-86. Therefore, the $8.6 billion in forecasted losses on loans to commercial farmers (made with the USDA model based on 1985 data) compare favorably with the $12.4 billion in losses on all agricultural loans to all farmers and landlords during 1985-87.

Influences on the Amounts Reported

Differing accounting standards for commercial banks, life insurance companies, FCS, and FmHA cause the timing of the recognition of loan losses and the actual amount of the loss to vary among lenders. The comparison of a loss estimate from farm data with published or imputed losses from lender financial statements also presents timing difficulties. For example, a lender may determine that a loss is likely and consequently increase the

Table 23—Lender loan losses (net chargeoffs), 1984-89

Lender and item	1984	1985	1986	1987	1988	1989	Total, 1984-89
				Million dollars			
Farmers Home Administration	178	335	490	1,240	2,171	3,396	7,810
Farm Credit System	429	1,121	1,387	624	343	-13	3,891
Commercial banks	987	1,546	1,512	662	190	129	5,026
Life insurance companies	87	159	248	208	109	48	859
Individuals and others	337	532	619	465	174	50	2,177
Annual lender loan losses	2,018	3,693	4,256	3,199	2,987	3,610	19,763
Cumulative lender loan losses	2,018	5,711	9,967	13,166	16,153	19,763	NA

NA = Not applicable.

allowance for loan losses, without notifying the farm borrower that the lender believes that a portion of the loan will be uncollectible. The potential loss in this case has already been recognized in the lender data. For these reasons, we have not been able to fine-tune estimates of potential loan losses from the lender data. It appears, however, that the loss estimates generated by the triangle model are reasonably consistent with the available information on lender losses.

A major influence on reported loan losses, at least for the next year or two, will be the rate at which FmHA works through its portfolio of problem loans. Status reports on loan delinquencies suggest that FmHA could possibly write off as much as $8 billion from its portfolio of farm loans within the next few years (table 24).

Many FmHA borrowers are delinquent. And, the bulk of the amount delinquent appears to be uncollectible. Of $8.4 billion in total delinquencies reported at the end of fiscal year (FY, runs from October through September) 1988, almost $8.2 billion was delinquent for more than 1 year, and $6.5 billion was delinquent for more than 4 years. Almost 85 percent of the amount delinquent for more than 4 years was on non-real-estate loans, suggesting that the bulk of the delinquencies now have virtually no collateral securing them. Many of the reportedly delinquent borrowers have probably quit farming. Over $1.1 billion in Economic Emergency loans, made under a program that has not been authorized since FY 1984, were reported delinquent. FmHA's inability to take collection action against chronically delinquent borrowers (due to a court injunction and other legal actions) has undoubtedly delayed reporting loan losses that were actually incurred several years ago.

Increases in FmHA loan losses over the next few years will reflect its catching up on reporting cumulative past losses. Losses will also increase with the loans written off as restructured debt or deferred payment options are applied to the amount currently delinquent. The 1987 Agricultural Credit Act legislates a policy of keeping FmHA borrowers on the farm while limiting long-term losses to the Government. Borrowers also are working with FmHA to develop cash-flow budgets under alternative financing options mandated by the 1987 Act. Borrowers failing to show positive cash-flows under interest rate reduction and debt deferral programs can have loan amounts reduced to reflect the current appraised value of the property less FmHA's cost of liquidation. While the exact amount of loans eligible for this restructuring is being worked out, it appears that most FmHA borrowers desiring to remain in farming will be able to do so.

Based on data about farmers and lenders through 1986, cumulative loan losses between $21 billion and $24 billion were forecast for the farm sector in 1987 *(3)*. Resolution of defaults on FmHA emergency and farm ownership loans will likely add several billion dollars in additional loan losses to the $20 billion estimated for 1981-89. Nevertheless, marked improvement in agricultural finances due to record-high farm incomes and recent increases in farmland prices may result in slightly lower losses than were forecasted in mid-1987.

Table 24—FmHA-insured loans: Major farm programs, debt outstanding, and delinquency amounts as of September 30, 1988

FmHA farm financial program	Loan amount outstanding	Unpaid principal delinquent	Amount delinquent		
			Total	Over 1 year	Over 4 years
		Thousand dollars			
Farm ownership	7,255,874	2,253,264	609,184	575,371	388,975
Operating loans	5,698,319	2,082,247	1,441,802	1,363,444	804,670
Emergency disaster	8,413,455	5,932,234	4,801,549	4,739,425	4,249,523
Economic emergency	3,376,279	2,085,237	1,408,549	1,381,823	1,108,388
Soil and water	264,346	114,492	52,615	50,609	36,384
Major farm program debt	25,008,273	2,467,664	8,313,761	8,110,672	6,587,940
Real estate[1]	9,835,933	3,533,826	1,428,386	1,377,563	1,032,489
Non-real-estate[2]	15,800,230	9,057,587	6,947,958	6,794,073	5,608,679
Total farm business debt	25,636,163	12,591,413	8,376,344	8,171,636	6,641,168

[1]Includes loans for farm ownership, soil and water maintenance, grazing association fees, Indian tribe acquisition, annual payment on rural housing, and 50 percent of economic emergency loans.
[2]Includes emergency, economic opportunity, and all operating loans, and 50 percent of economic emergency loans.

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